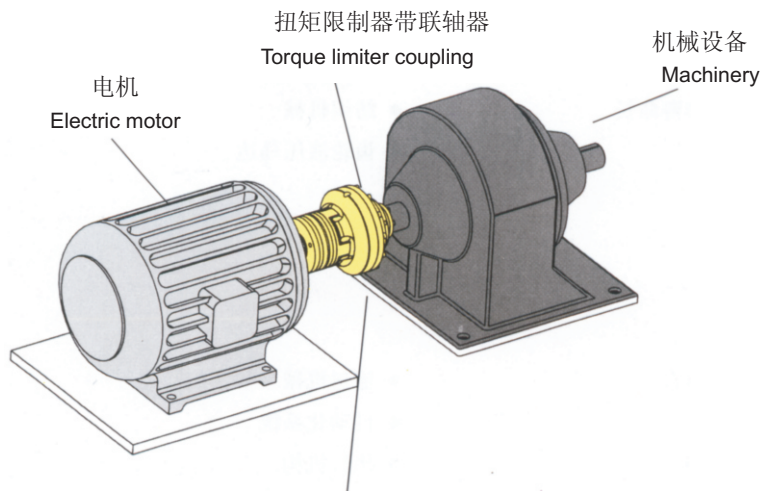


◇ 直接驱动  
Direct drives



应用在轴-轴的传动  
例如：  
--- 滚珠丝杠  
--- 轴向驱动  
--- 电机与齿轮箱之间的连接

shaft-to-shaft connection,  
for example:  
--- ball spindles  
--- axle drives  
--- between motor and gearbox

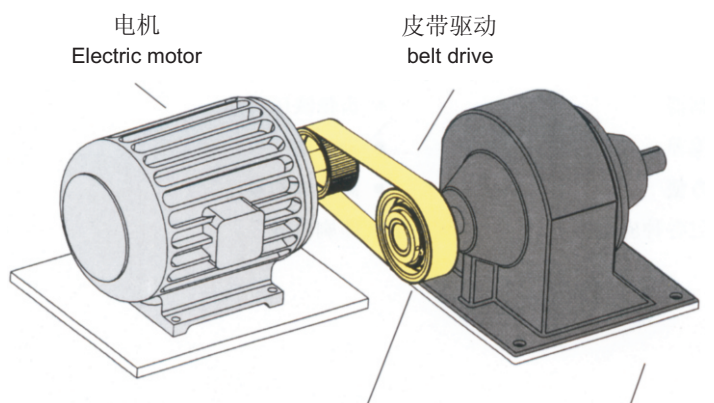
TSCL  
扭矩限制器带联轴器  
Torque limiter coupling



TC  
扭矩限制器带链轮  
Torque limiter with sprocket



◇ 间接驱动  
Indirect drives



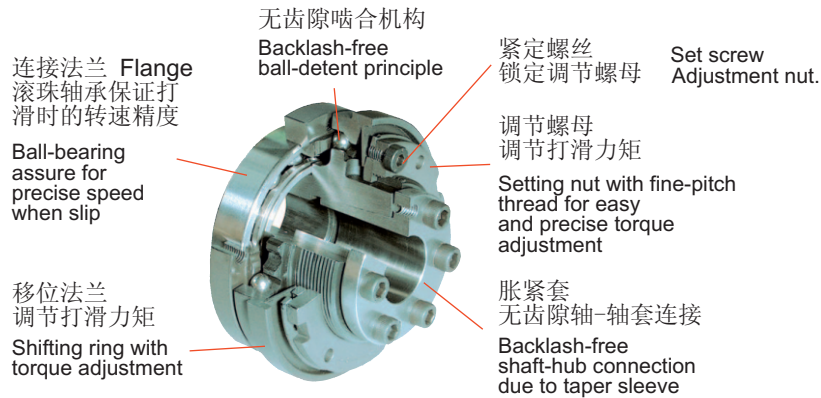
应用在轴-法兰的传动  
例如：  
--- 链轮  
--- 皮带传动  
--- 曲柄转动装置

Shaft-to-flange connection,  
for example:  
--- Sprockets  
--- Belt drives  
--- Crank gears

TSC  
扭矩限制器带安装法兰  
Ball-detent Torque limiter with flange



## 钢球式扭矩限制器 Ball-detent Torque Limiter



过载时，钢球离开了凹坑，使主动端部件和从动端部件之间产生打滑，从而避免了因过载而引起的损坏。移动环作“S”形的轴向移动，使安装的限位开关或接近开关发出信号，这个信号可用来控制或切断动力源。我们建议用一个绕过限位开关和传感器的旁路电路来快速重新启动动力设备。

过载消除后，钢球在保持架旋转过程中转动一个角度在下一个凹坑中自动复位，这样主动端和从动端部件在相互旋转一个角度后恢复正常转动。

TSC型钢球式扭矩限制器以高精度、高动态和高安全性满足了现代电子驱动的要求，可以绝对无间隙的传递扭矩。

The ball leave the indentation when overload, and a relative skid happen between driving and driven side, In this way damages due to overload are avoided. The shift ring makes an axial motion to the shifting way "S" and activates the limit switch or proximity initiator. The signal can be used for control functions or for disconnection of the drive. For the restart we would recommend to electrically bypass the limit switch or proximity initiator for a short time.

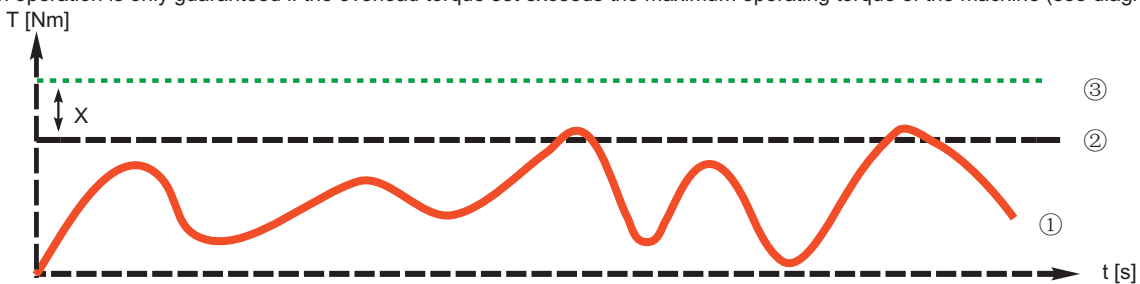
After the verload elimiated. The ball which was rotating in the keeping rotating veset automatically in the next indontainon then the drive and drive side was nesuming normal rotation with an mutual rotating angle.

### ◇ 影响扭矩限制器选型的重要因素：

Important factors for the selection of torque limiters:

为保证设备的平稳运行，过载扭矩的设定值必须大于设备的最大工作力矩。（见下图）

A smooth operation is only guaranteed if the overload torque set exceeds the maximum operating torque of the machine (see diagram below).



① 设备的扭矩曲线图 Torque curve of the machine

② 设备的最大工作力矩 Maximum operating torque of the machine

③ 扭矩限制器设定的打滑力矩 Torque of the coupling set

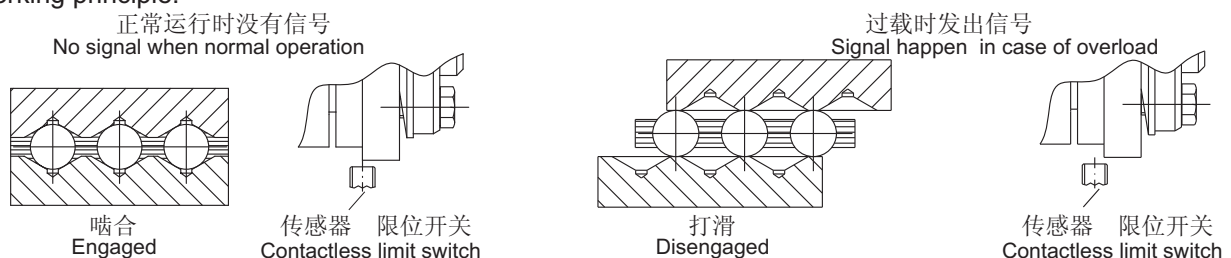
X 在②和③之间的安全余量（打滑力矩必须大于最大工作力矩的30%）

X Safety margin between ② and ③

(Should be at least 30% of the maximum operating torque of the machine).

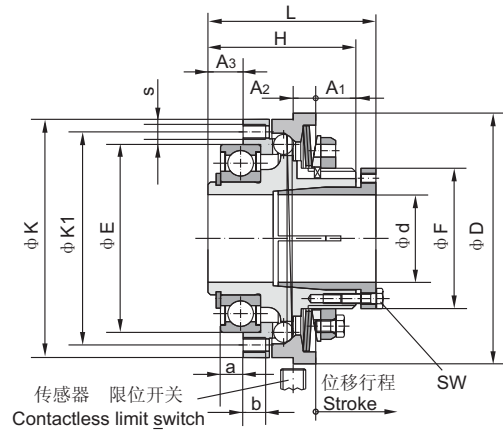
### ◇ 动作原理：

Working principle:



TSC-4.0型钢球式扭矩限制器  
TSC-4.0 Ball-detent Torque Limiter

◇ 轴-法兰连接  
shaft-to-flange connection



TSC-4.0型带胀紧套  
TSC-4.0 with clamping

◇ TSC型钢球式扭矩限制器参数 Parameter of TSC Torque Limiter

TSC 型号 Model	扭矩范围 Torque Range (Nm)				最高转速 Max.speed rpm	过载发生 止推位移 Move distance when overload mm	转动惯量 Mass moments of inertial		锁紧螺栓 $\phi d$ 及拧紧扭矩 Clamping screws and tightening torques for $\phi d$		重量 Weight kg
	X型 Type X	L型 Type L	M型 Type M	H型 Type H			轴毂端 Hub-side Kgm <sup>2</sup>	法兰端 Flexible-side Kgm <sup>2</sup>	mm	Nm	
01	5-12.5	10-25	20-50	25-62.5	4000	1.2	0.000211	0.000093	4xM4	4	0.68
02	10-25	20-50	40-100	50-125	3000	1.5	0.000531	0.000234	6xM4	4	1.14
03	20-50	40-100	80-200	100-250	2500	1.8	0.001388	0.000643	8xM4	4	1.98
04	40-100	80-200	160-400	200-500	2000	2.0	0.002846	0.001306	8xM5	8	2.88
05	70-175	140-350	280-700	380-875	1200	2.2	0.006858	0.002649	8xM6	12	4.59
06	120-300	240-600	480-1200	600-1500	800	2.5	0.029432	0.006690	8xM8	15	10.63

◇ TSC型钢球式扭矩限制器主要尺寸 Dimension of TSC Torque Limiter

尺寸: (mm)  
Dimensions in mm

TSC 型号 Model	$d_{min}$	$d_{max}$	D	F	E (h6)	K	$K_1$	L	H	$A_1$	$A_2$	$A_3$	a	b	S	SW
01	10	20	70	38	47	65	56	47	40	12	7	8	5	6	8xM4	7
02	15	25	85	44	62	80	71	56	48	13.5	8	11	7	7	8xM5	7
03	22	35	100	56	75	95	85	67	59	16	9	14	9	9	8XM6	7
04	32	44	115	70	90	110	100	73	64	17	10	16	10	10	8XM6	8
05	35	55	135	84	100	130	116	86	75	20.5	12	18	10	12	8XM8	10
06	40	65	166	100	130	166	150	130	115	46	16	21	12	15	8XM10	13

- |                        |   |
|------------------------|---|
| 1) 其他更大或更小扭矩范围产品请来电咨询; | 1) further sizes for smaller and larger torques available on request. |
| 2) 更大或更小的孔径请来电咨询;      | 2) smaller bores for low torques available on request.                |
| 3) 内孔公差适用H7;           | 3) tolerance of bore hole H7.   |

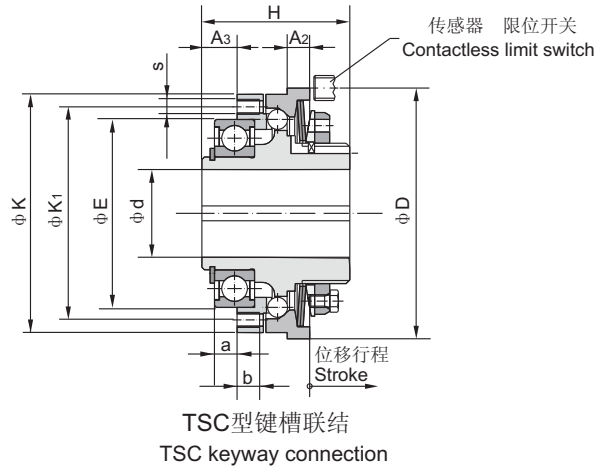
◇ 订货描述示例:

Order form:

TSC 01	L	$\phi 22$	$\phi 22$ -4.0胀紧套联结 $\phi 22$ -4.0 clamping
规格与型号 Size/type of joint	扭矩范围 Torque Range (Nm)	D成品孔径 Finish bore (H8)	成品孔径 (H8) 按JB/T7934-1999标准 Finish bore (H8) to JB/T7934-1999

## TSC型钢球式扭矩限制器 TSC Ball-detent Torque Limiter

- ◇ 轴-法兰连接  
shaft-to-flange connection



### ◇ TSC型钢球式扭矩限制器参数 Parameter of TSC Torque Limiter

TSC 型号 Model	扭矩范围 Torque Range (Nm)				最高转速 Max.speed rpm	过载发生 止推位移 Move distance when overload mm	转动惯量 Mass moments of inertia		锁紧螺栓 $\phi$ d及拧紧扭矩 Clamping screws and tightening torques for $\phi$ d		重量 Weight kg
	X型 Type X	L型 Type L	M型 Type M	H型 Type H			轴毂端 Hub-side Kgm <sup>2</sup>	法兰端 Flexible-side Kgm <sup>2</sup>	mm	Nm	
01	5-12.5	10-25	20-50	25-62.5	4000	1.2	0.000205	0.000093	4xM4	4	0.63
02	10-25	20-50	40-100	50-125	3000	1.5	0.000505	0.000234	6xM4	4	1.02
03	20-50	40-100	80-200	100-250	2500	1.8	0.001302	0.000643	8xM4	4	1.75
04	40-100	80-200	160-400	200-500	2000	2.0	0.002630	0.001306	8xM5	8	2.55
05	70-175	140-350	280-700	380-875	1200	2.2	0.006329	0.002649	8xM6	12	4.07
06	120-300	240-600	480-1200	600-1500	800	2.5	0.028443	0.006690	8xM8	15	10.06

### ◇ TSC型钢球式扭矩限制器主要尺寸 Dimension of TSC Torque Limiter

尺寸: (mm)  
Dimensions in mm

TSC 型号 Model	d	D	E (h6)	K	K <sub>1</sub>	H	A <sub>2</sub>	A <sub>3</sub>	a	b	S
01	12-20	70	47	65	56	40	7	8	5	6	8xM4
02	15-25	85	62	80	71	48	8	11	7	7	8xM5
03	22-30	100	75	95	85	59	9	14	9	9	8xM6
04	28-40	115	90	110	100	64	10	16	10	10	8xM6
05	32-50	135	100	130	116	75	12	18	10	12	8xM8
06	40-65	166	130	166	150	115	16	21	12	15	8xM10

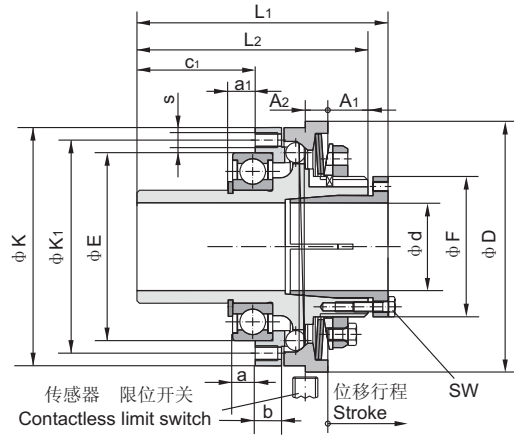
- |                        |   |
|------------------------|---|
| 1) 其他更大或更小扭矩范围产品请来电咨询; | 1) further sizes for smaller and larger torques available on request. |
| 2) 更大或更小的孔径请来电咨询;      | 2) smaller bores for low torques available on request.                |
| 3) 内孔公差适用H7;           | 3) tolerance of bore hole H7.   |

### ◇ 订货描述示例:

Order form:

TSC01	L	$\phi$ 22	$\phi$ 22键槽 $\phi$ 22key way
规格与型号 Size/type of joint	扭矩范围 Torque Range (Nm)	d成品孔径 Finish bore (H7)	成品孔径 (H7) 键槽按GB/T3852-1997(JS9)标准 Finish bore (H7) to GB/T3852-1997(JS9)

◇ 轴-法兰连接  
shaft-to-flange connection



TSL-4.0型带胀紧套加长型  
TSL-4.0 with clamping Lengthen type

◇ TSL型钢球式扭矩限制器参数 Parameter of TSL Torque Limiter

TSL 型号 Model	扭矩范围 Torque Range (Nm)				最高转速 Max.speed rpm	过载发生 止推位移 Move distance when overload mm	转动惯量 Mass moments of inertia		锁紧螺栓 $\phi d$ 及拧紧扭矩 Clamping screws and tightening torques for $\phi d$		重量 Weight kg
	X型 Type X	L型 Type L	M型 Type M	H型 Type H			轴毂端 Hub-side Kgm <sup>2</sup>	法兰端 Flexible-side Kgm <sup>2</sup>	mm	Nm	
01	5-12.5	10-25	20-50	25-62.5	4000	1.2	0.000225	0.000093	6xM4	4	0.78
02	10-25	20-50	40-100	50-125	3000	1.5	0.000588	0.000234	6xM4	4	1.36
03	20-50	40-100	80-200	100-250	2500	1.8	0.001491	0.000643	8xM4	4	2.26
04	40-100	80-200	160-400	200-500	2000	2.0	0.003105	0.001306	8xM5	8	3.34
05	70-175	140-350	280-700	380-875	1200	2.2	0.007350	0.002649	8xM6	12	5.18
06	120-300	240-600	480-1200	600-1500	800	2.5	0.03089	0.006690	8xM8	25	11.65

◇ TSL型钢球式扭矩限制器主要尺寸 Dimension of TSL Torque Limiter

尺寸: (mm)  
Dimensions in mm

TSL 型号 Model	d	D	F	E (h6)	K	K <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	c <sub>1</sub>	A <sub>1</sub>	A <sub>2</sub>	a <sub>1</sub>	a	b	S	SW
01	12-20	70	38	47	65	56	72	65	33	12	7	6.5	5	6	8xM4	7
02	15-25	85	44	62	80	71	88	80	43	13.5	8	8.75	7	7	8xM5	7
03	22-35	100	56	75	95	85	108	100	55	16	9	11.5	9	9	8XM6	7
04	28-45	115	70	90	110	100	124	115	67	17	10	13	10	10	8XM6	8
05	32-55	135	84	100	130	116	141	130	73	20.5	12	14	10	12	8XM8	10
06	40-65	166	100	130	166	150	185	170	76	46	16	16	12	15	8XM10	13

- |                        |   |
|------------------------|---|
| 1) 其他更大或更小扭矩范围产品请来电咨询; | 1) further sizes for smaller and larger torques available on request. |
| 2) 更大或更小的孔径请来电咨询;      | 2) smaller bores for low torques available on request.                |
| 3) 内孔公差适用H7;           | 3) tolerance of bore hole H7.   |

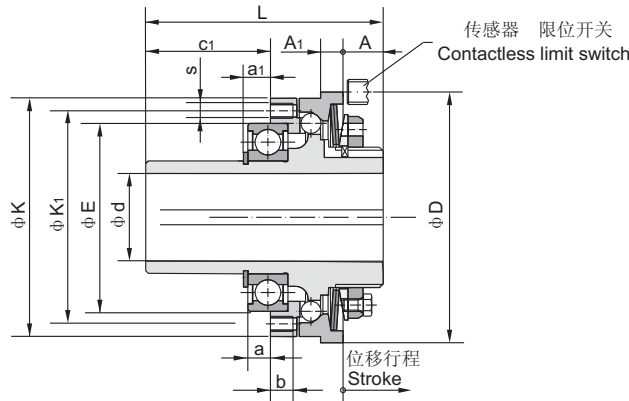
◇ 订货描述示例:

Order form:

TSL009	L	$\phi 22$	$\phi 22-4.0$ 胀紧套联结 $\phi 22-4.0$ clamping
规格与型号 Size/type of joint	扭矩范围 Torque Range (Nm)	d成品孔径 Finish bore (H8)	成品孔径 (H8) 按JB/T7934-1999标准 Finish bore (H8) to JB/T7934-1999

## TSL型钢球式扭矩限制器 TSL Ball-detent Torque Limiter

### ◇ 轴-法兰连接 shaft-to-flange connection



TSL型键槽联结加长型  
TSL with keyway lengthen type

### ◇ TSL型钢球式扭矩限制器参数 Parameter of TSL Torque Limiter

TSL 型号 Model	扭矩范围 Torque Range (Nm)				最高转速 Max.speed rpm	过载发生 止推位移 Move distance when overload mm	转动惯量 Mass moments of inertia		锁紧螺栓 φd 及拧紧扭矩 Clamping screws and tightening torques for φd		重量 Weight kg
	X型 Type X	L型 Type L	M型 Type M	H型 Type H			轴毂端 Hub-side Kgm <sup>2</sup>	法兰端 Flexible-side Kgm <sup>2</sup>	mm	Nm	
01	5-12.5	10-25	20-50	25-62.5	4000	1.2	0.000219	0.000093	4xM4	4	0.73
02	10-25	20-50	40-100	50-125	3000	1.5	0.000562	0.000234	6xM4	4	1.24
03	20-50	40-100	80-200	100-250	2500	1.8	0.001405	0.000643	8xM4	4	2.04
04	40-100	80-200	160-400	200-500	2000	2.0	0.002889	0.001306	8xM5	8	3.00
05	70-175	140-350	280-700	380-875	1200	2.2	0.006851	0.002649	8xM6	12	4.66
06	120-300	240-600	480-1200	600-1500	800	2.5	0.02990	0.006690	8xM8	15	11.04

### ◇ TSL型钢球式扭矩限制器主要尺寸 Dimension of TSL Torque Limiter

尺寸: (mm)  
Dimensions in mm

TSL 型号 Model	d	D	E (h6)	K	K <sub>1</sub>	L	C <sub>1</sub>	A	A <sub>1</sub>	a <sub>1</sub>	a	b	S
01	12-20	70	47	65	56	65	33	12	7	6.5	5	6	8xM4
02	15-25	85	62	80	71	80	43	13.5	8	8.75	7	7	8xM5
03	22-30	100	75	95	85	100	55	16	9	11.5	9	9	8XM6
04	28-40	115	90	110	100	115	67	17	10	13	10	10	8XM6
05	32-50	135	100	130	116	130	73	20.5	12	14	10	12	8XM8
06	40-65	166	130	166	150	170	76	46	16	16	12	15	8XM10

- 1) 其他更大或更小扭矩范围产品请来电咨询; 1) further sizes for smaller and larger torques available on request.
- 2) 更大或更小的孔径请来电咨询; 2) smaller bores for low torques available on request.
- 3) 内孔公差适用H7; 3) tolerance of bore hole H7.

### ◇ 订货描述示例:

Order form:

TSL009	L	φ22	φ22键槽联结 φ22key way
规格与型号 Size/type of joint	扭矩范围 Torque Range (Nm)	d成品孔径 Finish bore (H7)	成品孔径 (H7) 键槽按GB/T3852-1997(JS9)标准 Finish bore (H7) to GB/T3852-1997(JS9)



TSC型扭矩限制器以通过调整其调节螺母的刻度比例来设定扭矩，这种操作使得扭矩的调整变得更加简单方便。扭矩的调整是通过调节螺母（1）及锁紧螺钉（4）来调整的。

调整螺母（1）上有40%到100%的刻度比例，计算方法： $\frac{\text{所需扭矩}}{\text{本规格最高扭矩}} \times 100 = \text{得出所需扭矩的百分比}$

例如:TSC009-X型,扭矩范围20~50N.m(图1所示), 需要调节到30N.m,通过计算公式得出  $\frac{30}{50} \times 100 = 60\%$ ,使用月牙扳手

或者其它扳手将60%的刻度线调节至原点位置，将紧定螺钉4拧紧，扭矩设定完毕。如果客户没有特殊要求，扭矩的设定一般为其扭矩最大值的70%，以方便用户调节。

安装好的碟形弹簧（3）特性曲线范围的路径如(图2所示)，越强的预紧力会导致弹簧压力的减小，当顺时针方向调整调节螺母(1)后，弹簧压力会减小，扭矩会减小，当逆时针调节，弹簧压力会增大,扭矩会增大。

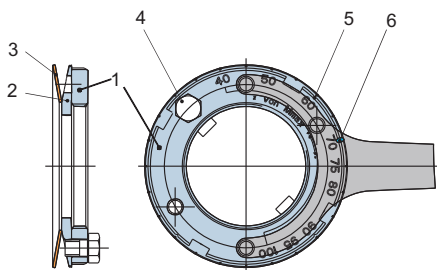
TSC ball type torque limiter was setted the torque by adjusting the scale of the adjusting nut, which make the adjustment of the torque become more convenient and easy.Adjusting nut (1) have the scale from 40% to 100% of torque, calculation formula:required torque/ maximum torqueX100=the percent of required torque E.g.TSC009-X type,torque range 20~50N.m, if the required torque is 30N.m,then we can calculate 30/50X100=60%, Adjust the 60% of scale line to origin location by crescent wrench or other kind of wrench,tight the set screw 4,then the torque setting was completed.If no other torque adjustment is requested customer side,normally the torque setting only reach 70% of the respective maximum torque for convenience purpose.

Adjust the torque by adjust its adjustment nut (1) and set screw (4).

Assemble the disc spring (3), the graph 2 shows the path of the characteristic range,the stronger pre-tension produces a decrease in spring force.

Turning the adjusting nut or the set screw therefore produces a decrease in spring force.Turing it anti-clockwise produces an increase in torque.

图1



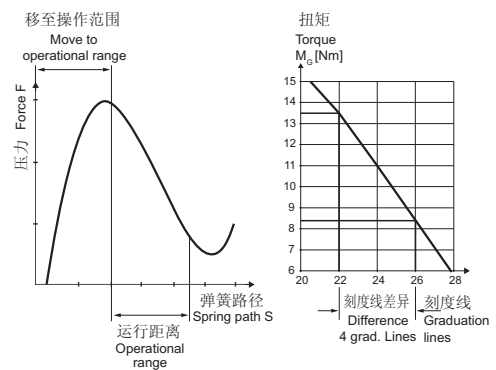
1. 调节螺母 Adjustment nut
2. 压板 Pressure plate
3. 碟形弹簧 Disc spring
4. 紧定螺钉 Set screw
5. 扭矩范围标签 Torque range tag
6. 扭矩设定原点 Torque setting

TSC 型预压式扭矩限制器

TSC ratchetting and synchronous clutch

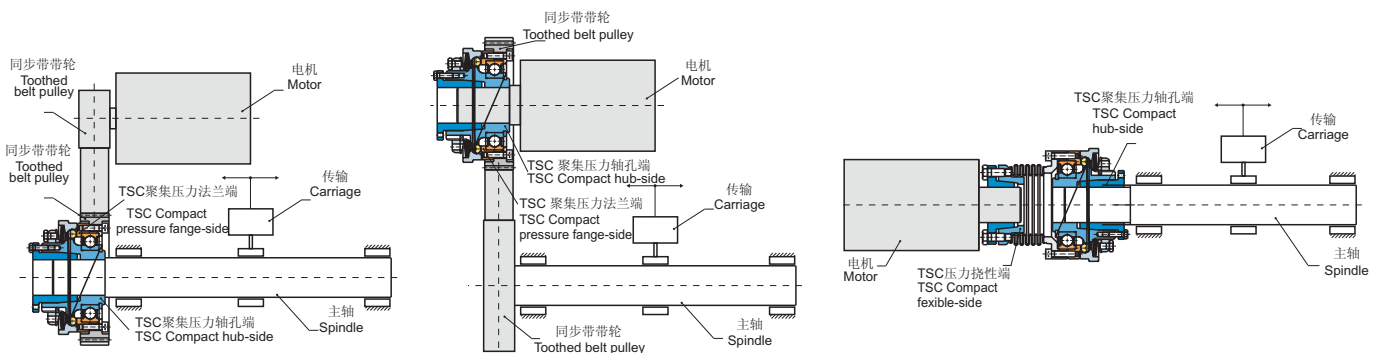
图2 碟形弹簧的压力曲线

Graph of spring characteristic curve



### ◇ TSC型扭矩限制器应用举例:

TSC Torque Limiter applications



## AF.AC型滚柱、滚珠式扭矩限制器 AF.AC Ball and Roller pilot Torque Limiter

### ◇ 规格说明

#### Specifications

- (M): 扭力调整螺帽内之固定螺丝之孔径及间距。  
 (N): 安装螺栓孔深度。  
 (S): 预留孔尺寸。  
 (U): 最大加工孔径尺寸。  
 (X): 当超负载发生时, 侦测压板弹跳距离。  
 (Ymax): 扭力调整螺帽锁紧之最大长度。  
 (Z): 当弹簧不受力时, 扭力调整螺帽之高度。  
 (T): 绊动扭力的调整范围。  
 ( $\delta$ ): 最大可容许角度错误之误差。  
 ( $\alpha$ ): 最大可承受连接二个轴心之间隙容许尺寸。  
 ( $\epsilon$ ): 最大可容许承受平行(相同)误差。  
 (Nmax): 最大可承受转动速度。  
 (J): 扭力限制器之惯量方距。  
 (W): 重量。

注1. 间隙误差之量是依集合H之尺寸所得知最大可容许轴力距之尺寸量。

注2. 平行(相同)误差是表示扭力传动钢珠所发生之最大公差量。

注3. 使用于速度超过Nmax值时(RPM), 请洽询本公司。

- M: the diameter and pitch of the set-screw inside the torque adjusting nut.  
 N: the depth of mounting taps.  
 S: pre-drilled starter hole size.  
 U: maximum drilling dimensions(implies that string hole S can be drilled to maximum dimensions U)  
 X: when an overload occurs, the overload detections panel moves X mm.  
 Ymax: maximum tightening length  
 Z: this dimension indicates the height when the spring is free and should be referred to when calculatina tripping torque  
 T: adjusting range for tripping torque  
 $\alpha$ : maximum allowable clearance error  
 $\epsilon$ : maximum allowable parallelism error  
 Nmax: maximum allowable rotating speed  
 J: Inertia moment of torque limiter  
 W: weight

Note1. The amount of clearance error  $\alpha$  is amount of allowable axial movement based on the assembly dimensions of H.

Note2. Parallelism error  $\epsilon$  indicates the maximum amount of absorption that occurs at the torque transmitting ball of torque limiter.

Note3. Please consult us for use at speeds that exceed the value of Nmax.

### ◇ Af规格表

Table of AF series specifications

Model	T (N.m)	a(N)	b(N)	c (N.m)	Nmax (rpm)	J (Kg.m <sup>2</sup> )	W (Kg)
4AF-007S	0.3~0.7						
4AF-010S	0.4~1.0	69	392	3.4	2000	0.05	0.24
4AF-030S	1.0~3.0					$\times 10^{-3}$	
4AF-045S	1.5~4.5						
5AF-030S	0.8~0.3						
5AF-060S	1.5~6.0	108	569	6.9	1600	0.24	0.50
5AF-100S	2.0~10.0					$\times 10^{-3}$	
5AF-180S	4.0~18.0						
6AF-07S	2~7						
6AF-1S	3~10	3822	7938	118	800	1.3	1.5
6AF-3S	10~30					$\times 10^{-3}$	
6AF-5S	15~50						
7AF-7L	22~70						
7AF-12L	40~120	7154	10780	196	600	4.8	3.4
7AF-25H	80~250					$\times 10^{-3}$	
7KRF-40H	120~400						
8AF-12L	50~120						
8AF-20L	70~200	10290	14700	372	400	0.015	6.2
8AF-40H	120~400						
8AF-60H	200~600						
11AF-25L	80~250						
11AF-35L	120~350	14700	22050	666	300	0.035	11.4
11AF-85H	220~850						
11AF-120H	350~1200						
14AF-30L	110~300						
14AF-45L	150~450	23520	28420	1019	250	0.085	20
14AF-120H	420~1200						
14AF-180H	600~1800						
18AF-130L	400~1300						
18AF-180L	800~1800	30184	35280	1441	180	0.3	42
18AF-300H	1500~3000						
18AF-500H	3000~5000						

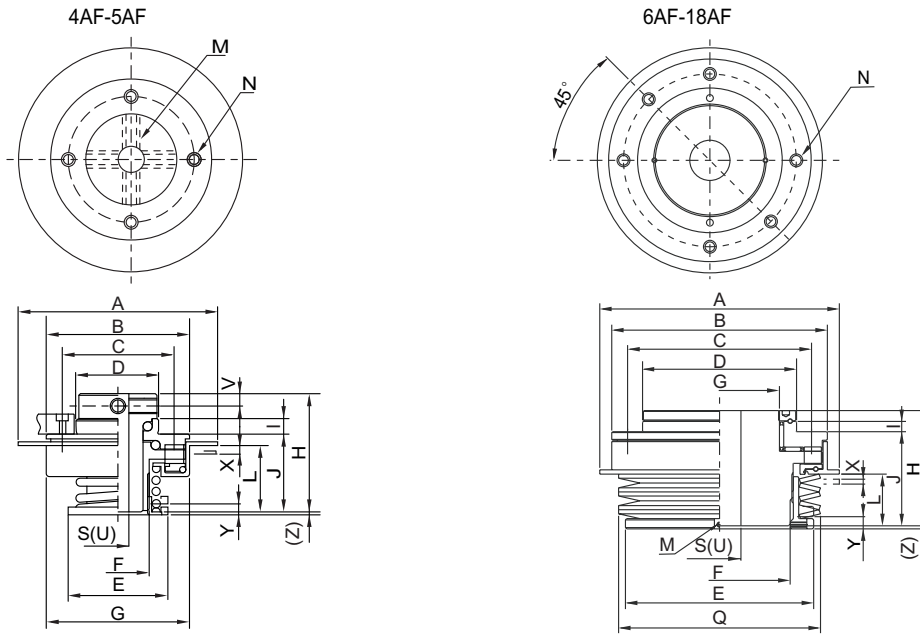
### ◇ Ac规格表

Table of AC series specifications

Model	T (N.m)	$\delta$ (deg)	$\alpha$ (mm)	$\epsilon$ (mm)	Nmax (rpm)	J (Kg.m <sup>2</sup> )	W (Kg)
4AC-007S	0.3~0.7						
4AC-010S	0.4~1.0	1	$\pm 1.0$	0.05	2000	0.09	0.25
4AC-030S	1.0~3.0					$\times 10^{-3}$	
4AC-045S	1.5~4.5						
5AC-030S	0.8~0.3						
5AC-060S	1.5~6.0	1	$\pm 1.0$	0.05	1600	0.4	0.68
5AC-100S	2.0~10.0					$\times 10^{-3}$	
5AC-180S	4.0~18.0						
6AC-06S	2~6						
6AC-1S	3~10	1.5	$\pm 1.5$	0.05	1000	1.7	1.5
6AC-3S	8~30					$\times 10^{-3}$	
6AC-5S	15~50						
7AC-6L	20~60						
7AC-10L	30~100	1.2	$\pm 1.8$	0.1	700	5.8	3.2
7AC-20H	60~200					$\times 10^{-3}$	
7AC-35H	100~350						
8AC-12L	40~120						
8AC-15L	60~150	1.2	$\pm 2$	0.1	500	0.014	5.3
8AC-35H	100~350						
8AC-45H	120~450						
11AC-20L	70~120						
11AC-35L	100~350	1	$\pm 2.5$	0.1	400	0.035	10.8
11AC-65H	200~650						
11AC-100H	300~1000						
14AC-30L	100~300						
14AC-45L	150~450	0.7	$\pm 3.5$	0.1	300	0.093	20
14AC-130H	500~1300						
14AC-200H	800~2000						
18AC-160L	700~1600						
18AC-250L	1000~2500	0.5	$\pm 3.5$	0.1	200	0.4	45
18AC-380H	1600~3800						
18AC-500H	3000~5000						



◇ 规格说明  
Specifications



◇ Af尺寸表

Table of KRF series dimensions

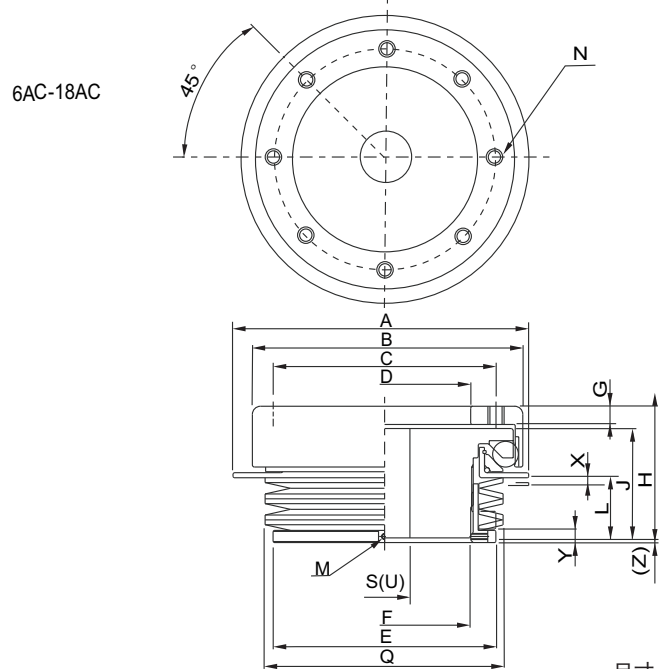
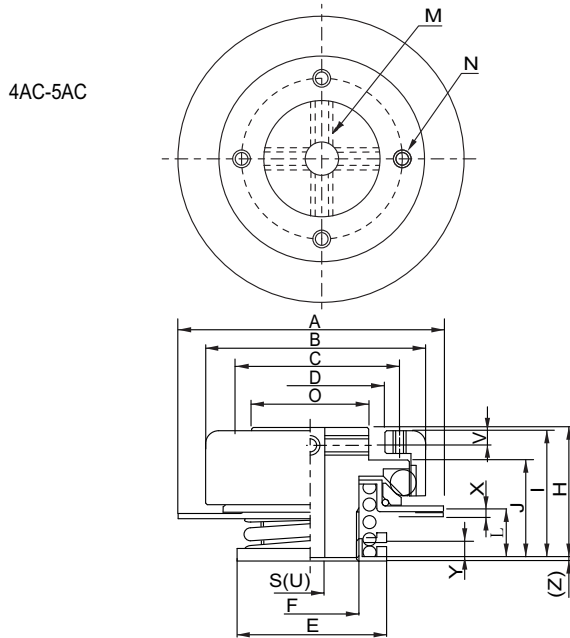
单位: (mm)  
(Unit: mm)

Model	A	B	C	D	E	F	G	H	I	J	L	M	N	Q	S	U	V	X	Y <sub>max</sub>	(Z)
4AF-007S											21.2		4-M4					1.1	2.2	0.7
4AF-010S	64	46	PCD	26h7	32	M20	46	38	4.7	25	21.4	4-M5	P0.7	—	7	12	4	1.3	2.4	0.5
4AF-030S			36			P1					21.2	P0.8	DP4.7					1.1	2.5	0.7
4AF-045S											21.4							1.3	3.3	0.5
5AF-030S											29.0		4-M4					0.9	5.6	1.3
5A-060S	82	63	PCD	35h7	45	M30	63	50	4.7	34	29.5	4-M6	P0.7	—	9	20	6	1.4	5.0	0.8
5AF-100S			50			P1.5					29.0	P0.8	DP5.7					0.9	7.5	1.3
5AF-180S											29.5							1.4	6.4	0.8
6AF-07S											25.0		6-M6					1.3	9.0	3.9
6AF-1S	88	88	PCD	60h7	58	M40	M40	60	5	48	25.5	2-M5	P1	—	12.5	30	—	2.0	7.6	3.2
6AF-3S			75			P1.5	P1.5				25.0	P0.8	DP.7					1.3	9.5	3.9
6AF-5S											25.5							2.0	9.8	3.2
7AF-7L											30.0		6-M6					1.6	5.3	1.7
7AF-12L	128	113	PCD	75h7	88	M55	M52	70	6.6	55	31.0	2-M5	P1.25	102	16.5	40	—	2.5	4.9	0.9
7AF-25H			95			P2	P1.5				30.0	P0.8	DP.9					1.6	6.2	1.4
7AF-40H											31.0							2.5	6.2	0.6
8AF-12L											37.5		6-M8					1.6	6.2	0
8AF-20L	164	138	PCD	100h7	108	M75	M72	82	7.6	65	38.5	2-M5	P1.25	130	16.5	52	—	2.5	6.2	-0.8
8AF-40H			120			P2	P1.5				37.5	P0.8	DP.11					1.6	7.5	-0.7
8AF-60H											38.5							2.5	7.0	-1.5
11AF-25L											42.0		6-M10					2.0	7.3	2.0
11AF-35L	198	170	PCD	120h7	134	M96	M90	95	9.6	75	43.0	2-M5	P1.5	160	27	68	—	3.0	5.0	1.0
11AF-85H			148			P2	P1.5				42.0	P0.8	DP.13					2.0	7.7	-0.5
11AF-120H											43.0							3.0	7.4	-1.5
14AF-30L											43.5		6-M12					2.2	6.4	4.2
14AF-45L	236	206	PCD	150h7	158	M120	M120	105	10.4	85	44.5	2-M6	P1.75	186	27	90	—	3.5	5.5	2.9
14AF-120H			180			P2	P1.5				43.5	P1	DP.15					2.2	9.0	3.2
14AF-180H											44.5							3.5	8.6	1.9
18AF-130L											59.0		6-M16					3.3	10.7	5.0
18AF-180L	280	252	PCD	180h7	220	M165	M140	135	12	110	60.5	2-M6	P2	236	50	110	—	5.0	7.7	3.3
18AF-300H			215			P3	P2				59.0	P1	DP.20					3.3	8.8	5.2
18AF-500H											60.5							5.0	7.7	3.5

Ac型钢球式扭力限制器  
AC Ball detent Torque Limiter

◇ 轴-法兰连接

Shaft-to-ring connection

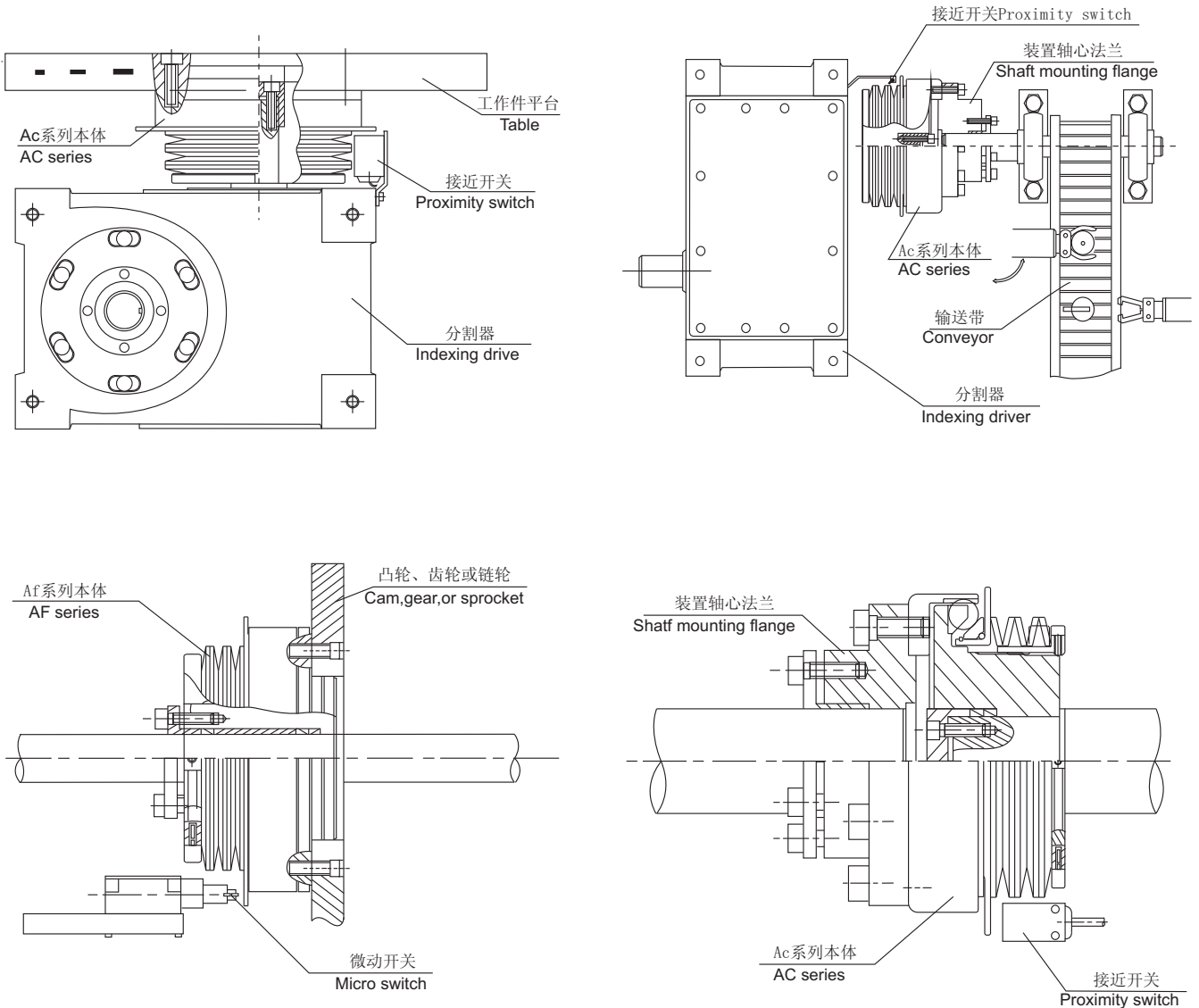


◇ AC 尺寸表 Table of AC series dimensions

尺寸: (mm)  
Dimensions in mm

型号 Model	A	B	C	D	E	F	G	H	I	J	L	M	N	Q	S	U	O	V	X	Ymax	(Z)
4AC-007S											7.6								0.7	2.7	0.6
4AC-010S	64	52	PCD	34	32	M20	5	28	27	20.5	8.0	4-M5	4-M5	-	7	15	27	4.5	1.1	3.0	0.2
4AC-030S			40	H7		P1					7.6	P0.8	P0.7						0.7	3.3	0.6
4AC-045S											8.0		DP.5						1.1	4.0	0.2
5AC-030S											13.1								0.6	5.4	0.3
5AC-060S	82	71	PCD	46	45	M30	7	40	39	30	13.7	4-M6	4-M4	-	9	22	36	5.5	1.2	6.5	-0.3
5AC-100S			55	H7		P1.5					13.1	P0.8	P0.7						0.6	7.6	0.3
5AC-180S											13.7		DP.7						1.2	8.0	-0.3
6AC-06S											18.5								1.4	8.7	3.2
6AC-1S											19.0	2-M5	8-M6	-	12.5	30	-	-	2.2	5.7	2.8
6AC-3S	93	95	PCD	50	58	M40	9	52	-	40	18.5	P0.8	P1	-					1.4	10.0	3.2
6AC-5S			70	H7		P1.5					19.0		DP.9						2.2	9.6	2.8
7AC-6L											30.0								1.6	6.4	2.0
7AC-10L											31.0	2-M5	8-M8						2.6	7.1	0.9
7AC-20H	128	116	PCD	70	88	M55	10	65	-	52	30.0	P0.8	P1.25	102	16.5	40	-	-	1.6	6.4	1.7
7AC-35H			90	H7		P2					31.0		DP.10						2.6	6.2	0.6
8AC-12L											35.0								1.7	10.8	2.5
8AC-15L											36.0	2-M5	8-M8						2.7	5.9	1.6
8AC-35H	164	142	PCD	90	108	M75	12	75	-	60	35.0	P0.8	P1.25	130	16.5	52	-	-	1.7	6.9	1.8
8AC-45H			110	H7		P2					36.0		DP.12						2.7	5.7	0.9
11AC-20L											41.5								2.0	10.8	2.4
11AC-35L											43.0	2-M5	8-M10						3.2	11.2	1.0
11AC-65H	198	176	PCD	110	134	M96	16	90	-	70	41.5	P0.8	P1.5	160	27	68	-	-	2.0	7.4	-0.1
11AC-100L			130	H7		P2					43.0		DP.16						3.2	6.7	-1.5
14AC-30L											44.0								2.1	7.5	4.5
14AC-45L											44.0	2-M6	8-M12						3.7	6.0	4.5
14AC-130H	236	208	PCD	130	158	M120	16	100	-	80	44.0	P1	P1.75	186	27	90	-	-	2.1	10.0	3.5
14AC-200H			160	H7		P2					44.0		DP.16						3.7	10.2	3.5
18AC-160L											59.0								3.7	12.5	4.8
18AC-250L											59.0	2-M6	8-M16						6.2	8.3	5.0
18AC-380H	285	285	PCD	170	220	M170	18	130	-	108	59.0	P1	P2	236	50	130	-	-	3.7	8.0	5.0
18AC-500H			220	H7		P3					59.0		DP.18						6.2	6.5	5.2

◇ 实体应用范例  
Actual applications



◇ 订货描述示例:  
Order form:

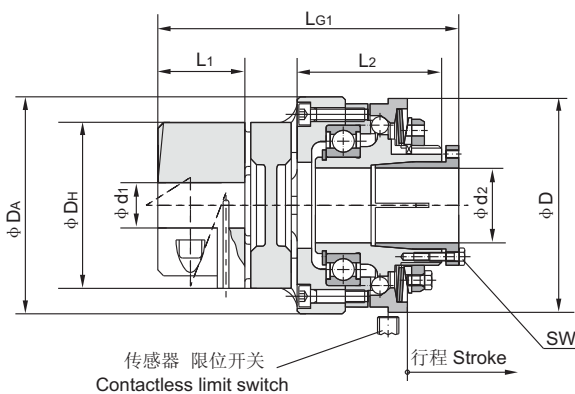
14AC	130H	φ 27	φ 27键槽 φ 27 key way
规格与型号 Size/type of joint	扭矩范围 Torque Range (Nm)	d <sub>2</sub> 成品孔径 Finish bore (H7)	成品孔径 (H7) 键槽按GB/T3852-1997 (JS9) 标准 Finish bore (H7) to GB/T3852-1997 (JS9)

## TSCL型扭力限制型联轴器 TSCL Torque Limiter Coupling

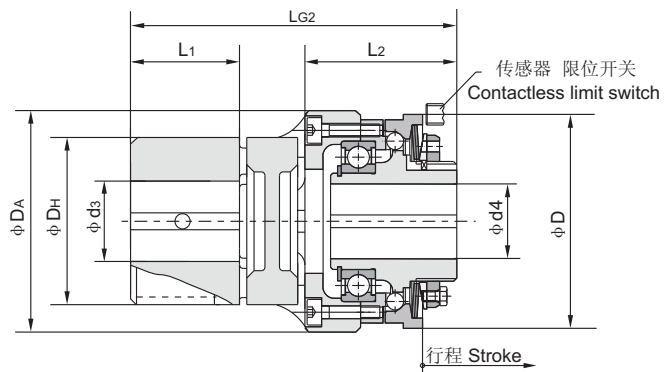
### ◇ 轴-轴连接 Shaft-to-shaft connection



- 轴-轴连接的TSCL型扭矩限制器  
TSCL safety clutch as a shaft-to-shaft connection
- 轴向插入，安装方便  
Axial plug-in, easy installation.
- 可装在设备上进行力矩设定  
Torque setting possible after installed on machinery



TSCL-4.0型胀套联结  
TSCL-4.0 with clamping connection



TSCL键槽联结  
Design TSCL-4.0 keyway connection

### ◇ TSCL型钢球式扭矩限制器参数 Parameter of TSCL Torque Limiter

TSCL 规格	扭距范围 Torque Range (Nm)			最高转速 Max.speed unbalanced rpm	过载发生止推位移 Thrust washer stroke on overload mm
	X型	L型	M型		
1906	5-12.5	10-25	20-50	4000	1.2
1908	10-25	20-50	40-100	3000	1.5
009	20-50	40-100	80-200	2500	1.8
011	40-100	80-200	160-400	2000	2.0
013	70-175	140-350	280-700	1200	2.2
215	120-300	240-600	480-1200	800	2.5

### ◇ TSCL型钢球式扭矩限制器主要尺寸 Dimension of TSCL Torque Limiter

TSCL 规格	$\phi d_1$	$\phi d_2$	$\phi d_3$	$\phi d_4$	$DA$	$DH$	$D$	$LG_1$	$LG_2$	$L_1$	$L_2$
1906	15-28	10-20	8-28	10-20	70	55	70	102	95	30	47
1908	19-35	15-25	10-38	15-25	85	65	85	120	112	35	57
009	20-45	20-35	12-45	20-30	100	80	100	146	138	45	69
011	28-45	30-45	14-55	30-40	115	95	115	159	150	50	74
013	35-55	35-55	20-60	35-50	135	105	135	182	171	56	87
215	45-80	40-65	35-80	40-65	175	135	166	255	240	75	130

### ◇ 订货描述示例:

Order form:

TSCL009	L	$\phi 20$	$\phi 20$	$\phi 20$ 键槽 $\phi 20$ keyway或 $\phi 20-4.0$ $\phi 20-4.0$ clamping
规格与型号 Size/type of joint	扭距范围 Torque Range (Nm)	$d_1$ 成品孔径 Finish bore (H7)	$d_2$ 成品孔径 Finish bore (H7)	成品孔径(H7)键槽按GB/T3852-1997(JS9)标准 Finish bore (H7) Keyway toGB/T3852 sheet 1997 (Js9)